Gas for Cooking

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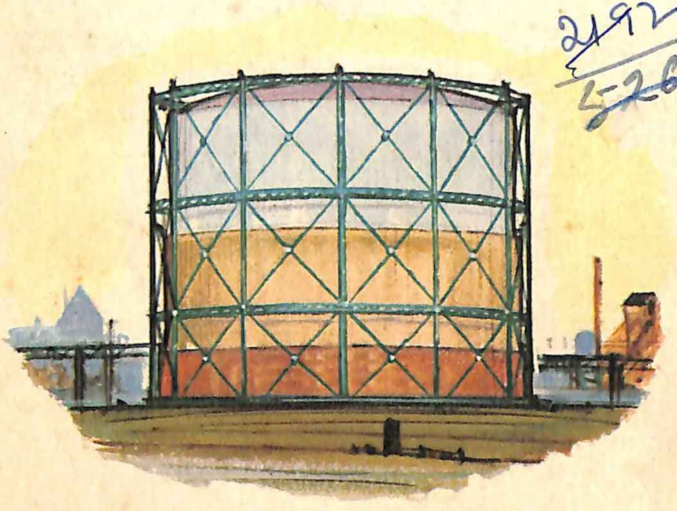

SERVICES WE USE 5

GAS FOR COOKING

One day, as he was coming home from school, Tom stopped by the Gas showrooms.

In the window were ovens, hot-water geysers, washing-machines, gas-fires, refrigerators, gas-rings and gas-pokers. There was a picture of a funny little man called Mister Therm.

"Where does the gas come from to work all these things?" thought Tom. "How is it made?"

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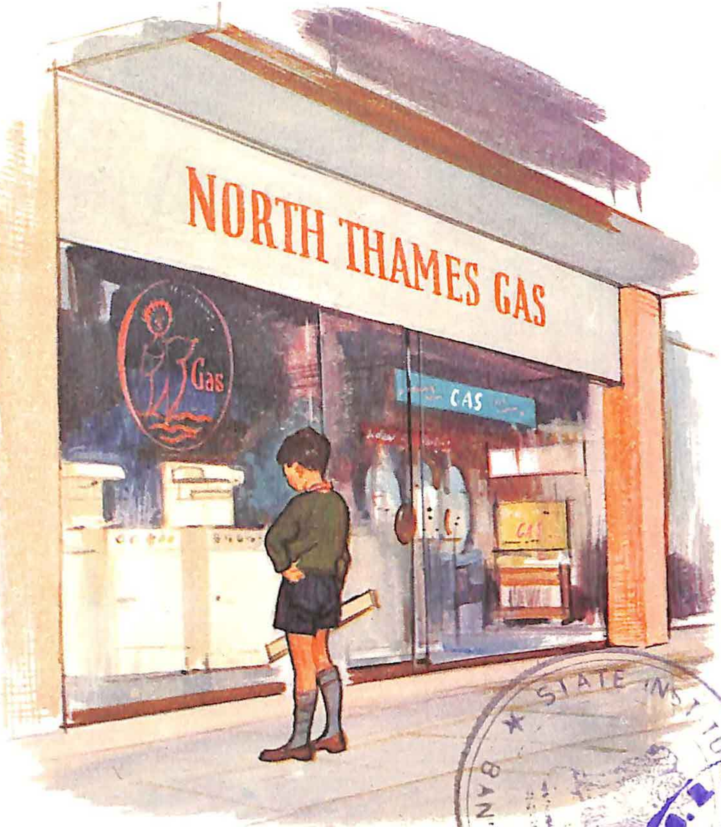

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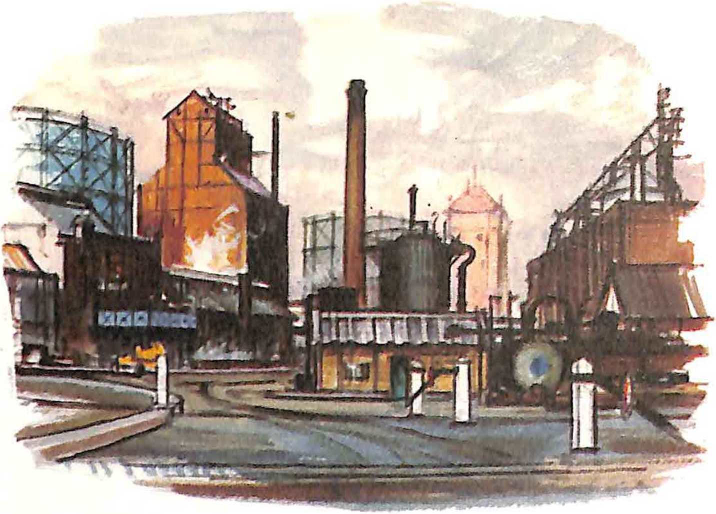

Gas is made at the gas-works. Every town has its gas-works. Often, you can tell you are near the gas-works by its smell. But gas-works are very useful, and we should miss gas very much indeed if we had to do without it.

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Gas began to be used over a hundred years ago. At first, it was used to light the streets and, later, houses. It took the place of oil lamps and candles.

Some people were afraid of it. They thought the flames came through the pipes, and that they would get hot and set the house on fire!

Gas is made from coal. Huge piles of coal are stacked in the yard of the gas-works. It is "cooked" in big ovens called retorts. The retort-house is one of the biggest buildings in the gas-works.

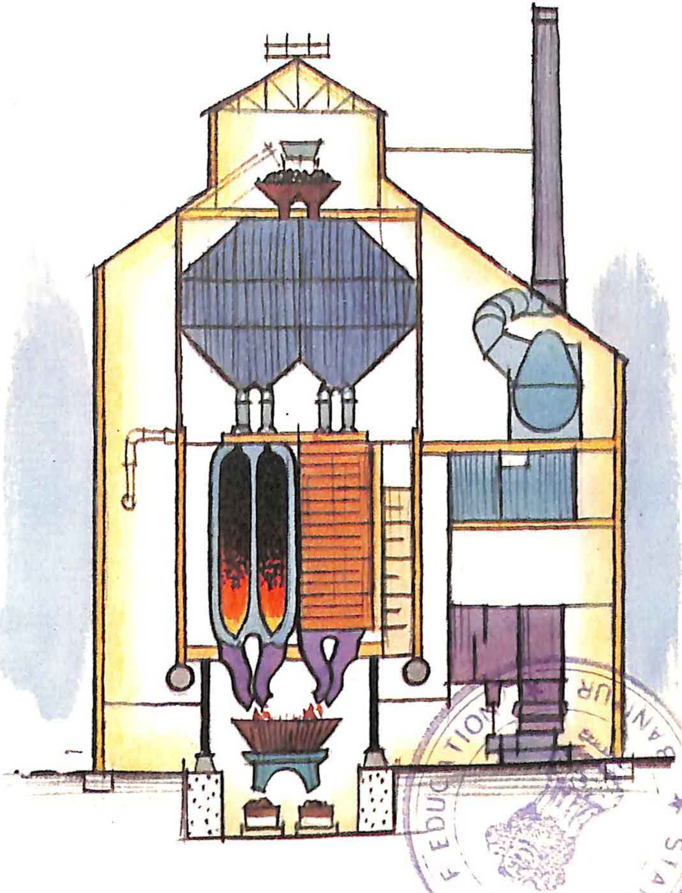
The coal is loaded into buckets fastened on to a chain. The chain carries the buckets up to the top of the retort-house.

The buckets go into the retort-house and tip the coal into big, funnel-shaped hoppers from which it is fed into the retort. Each retort has its own hopper.

The coal drops from the hopper into the retort below. The retorts are heated by gas. They are so hot that they have to be lined with fire-clay. If the retorts were made of iron alone they would melt!

As the coal is "cooked", it gives off coal-gas. At first, this is not pure gas. It looks like dirty, yellow smoke. Pure gas cannot be seen at all.

When all the gas has gone, the stuff that is left is called coke. This is taken from the bottom of the retort.



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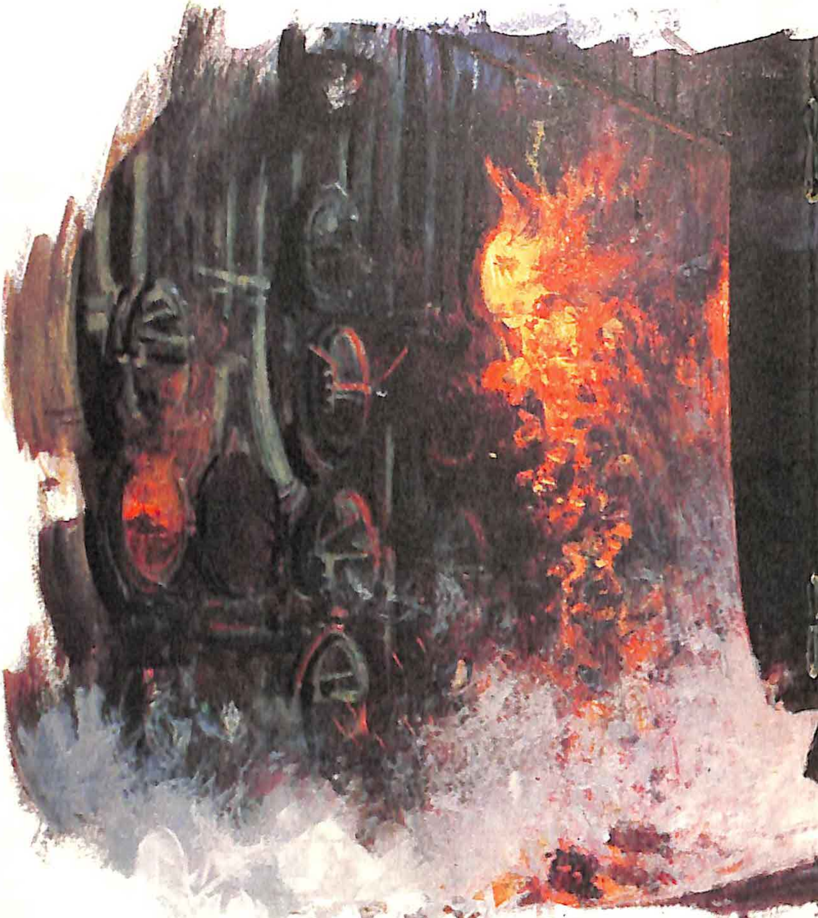
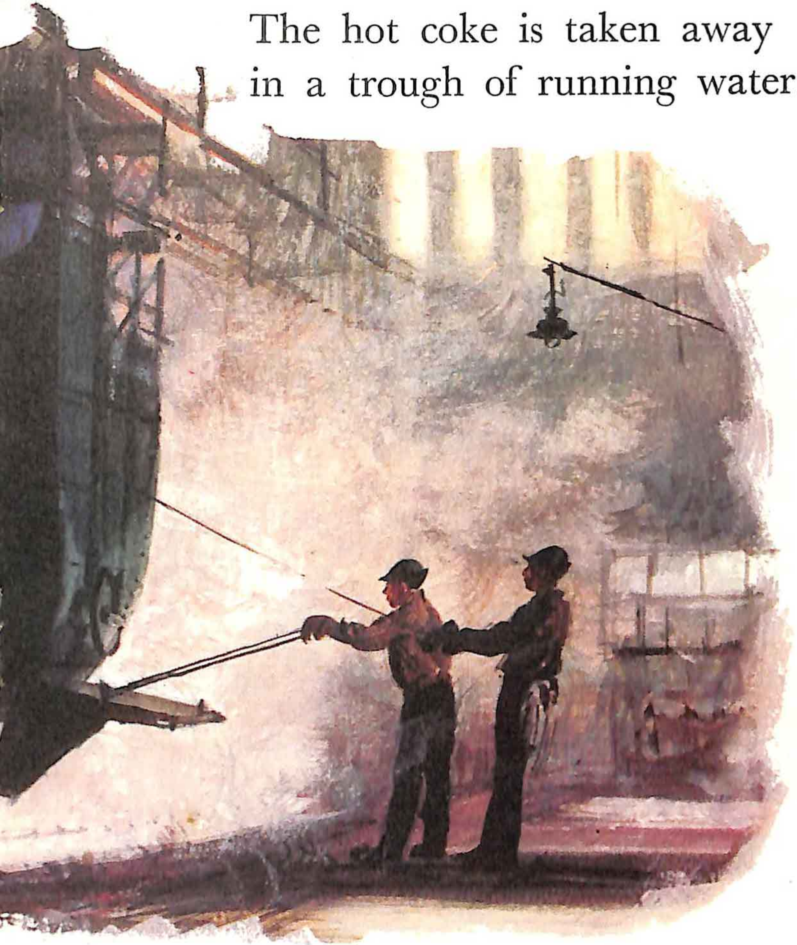


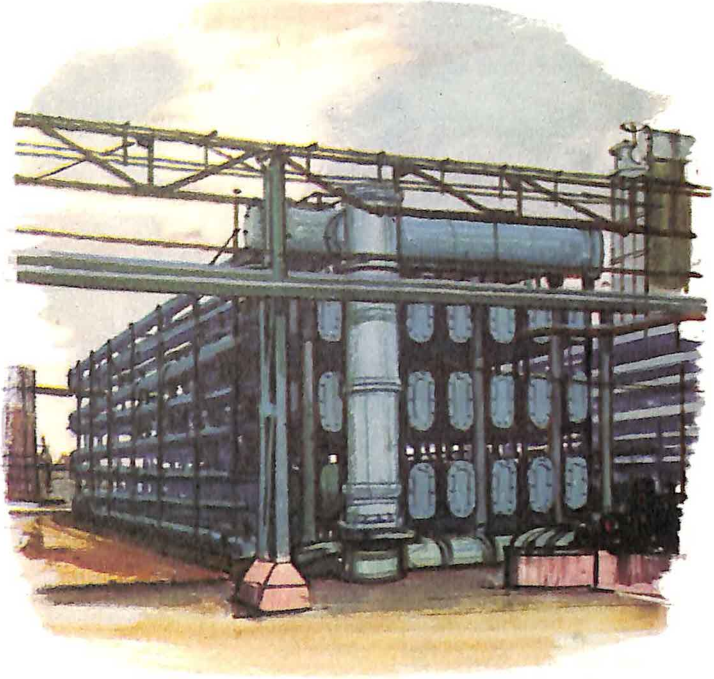
The hot coke is taken away
in a trough of running water.



The dirty gas comes out at the top of the retort. It is drawn through pipes to the condensers. Here it passes slowly through pipes which are kept cool on the outside by water.

As it passes through, tar and ammonia are taken out of the gas.

The tar is very useful. It is used in making roads and paths. It is also used to make disinfectants, medicine, scent and dyes. Ammonia is used in the making of many things—smelling-salts, explosives and many more.



This is a condenser. It is like a forest of pipes.

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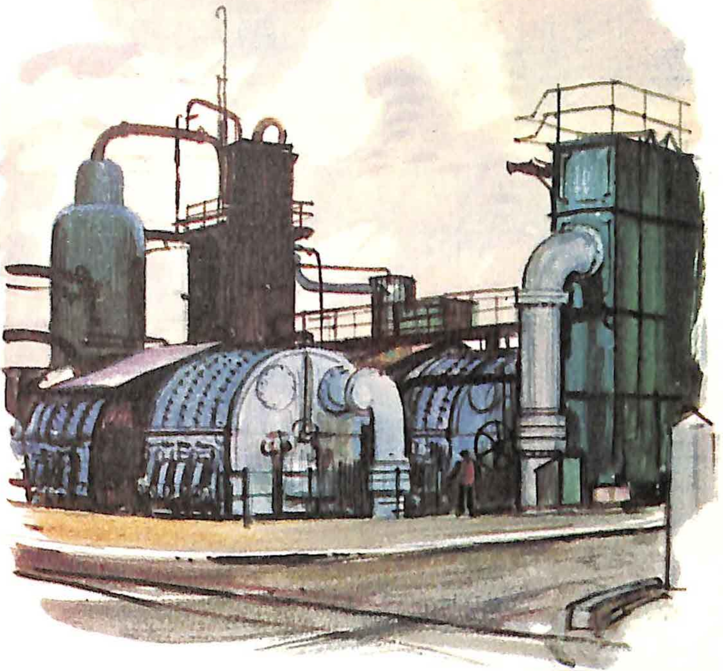
The gas next passes to a machine called a "scrubber". This does not really scrub the gas! It washes it. The gas bubbles through water and this takes out more dirt.

Even now, the gas is not yet clean. It has to pass through a machine called a "purifier". This takes out most of the remaining dirt, and from some of this dirt we get a material called sulphur.

Another machine takes benzole out of the gas. Benzole is used in motor-cars and is like petrol. In a gas-works nothing is wasted.

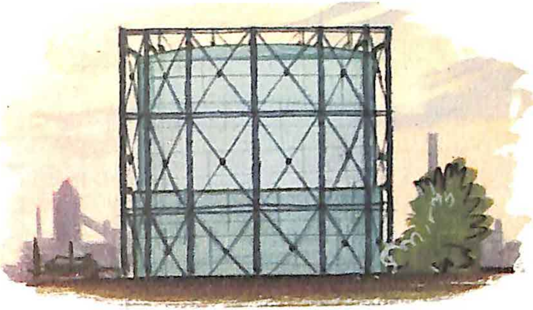


Here is the scrubber and the benzole plant.

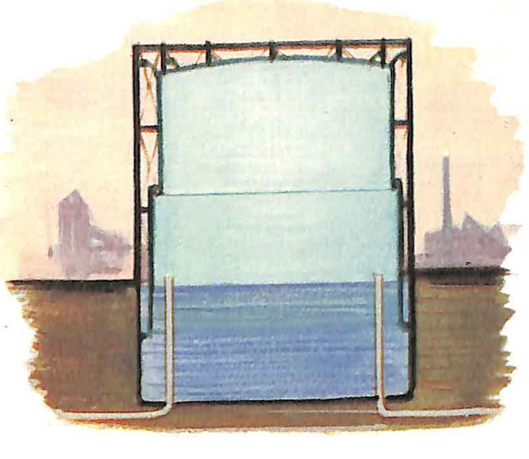
When the gas is quite pure, it passes into the biggest thing in the gas-works—the gas-holder. Here the gas is stored until it is used.

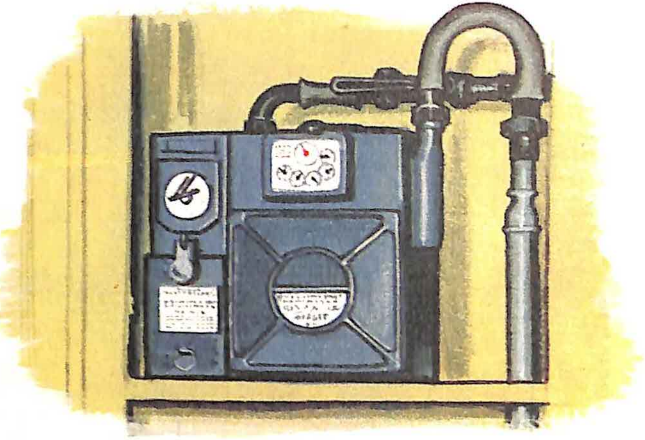
The gas-holder is a very big tank upside-down. It lifts up and down like a telescope inside another tank with water in it. The more gas there is in it, the higher it goes. The water in the bigger tank stops gas from escaping round the edges.

There are different kinds of gas-holders. Some turn round as they lift. Others do not move, but have a big moving piston inside them.



These two pictures show how the gas is trapped by the water.





The gas passes through big pipes called "mains" under the streets. Then it branches into little pipes and goes into the houses.

Here it passes through a meter which measures how much gas is being used in the house.

THINGS TO DO

1. Write down the names of all the things which need gas to run them.

2. Make a drawing of a gas-retort.

3. Make a drawing of a gas-holder.

THINGS TO FIND OUT

1. Gas has a smell. It is important that gas *should* smell. Find out why.

2. Find out what coke is used for. It is better than coal in some ways. Find out why.

3. Find out where your gas at home comes from. Perhaps, some day, you will be able to look over the gas-works.

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SERVICES WE USE

by Kenneth Nuttall

ILLUSTRATED BY W. G. MORDEN

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